



ANNUAL REVIEWS

Intelligent Synthesis of the Scientific Literature
Nonprofit Publisher of the *Annual Review of*™ Series

Welcome

US Patent & Trademark Office

[Log In \(Register\)](#) | [Log Out](#)

[Home](#)

[Order](#)

[Browse](#)

[Search](#)

[Profile](#)

[Help](#)

Abstract

Annual Review of Phytopathology

September 1996, Vol. 34, pp. 299-323
(doi:10.1146/annurev.phyto.34.1.299)

[Series Home](#) :

[Prev. Article](#)
[View/Print Pdf](#)
[Add to Favorites](#)
[Email to a Friend](#)

PLANT VIRUS GENE VECTORS FOR TRANSIENT EXPRESSION OF FOREIGN PROTEINS IN PLANTS

Herman B. Scholthof and Karen-Beth G. Scholthof

Department of Plant Pathology and Microbiology, Texas A&M University, College Station, Texas 77843

Andrew O. Jackson

Department of Plant Biology, University of California, Berkeley, California 94720

Quick Links

- [ISI Citations](#)
- [Search for this article in ISI Web of Science \(more\)](#)
- [Alert me when new articles are published](#)
- [Download full text](#)
- [Related articles in Annual Review of Phytopathology](#)
- [View More Reviews](#)

Quick Links

[Annual Review of Phytopathology](#)

Authors:

- ☐ Herman B. Scholthof
☐ Karen-Beth G. Scholthof
☐ Andrew O. Jackson

Keywords:

- ☐ plant biotechnology
☐ biotechnology
☐ gene transfer
☐ autonomic
☐ transient
☐ gene expression
☐ gene insertion
☐ epitope
☐ complex
☐ foreign
☐ reporter

▪ **Abstract** The development of plant virus gene vectors for expression of foreign genes in plants provides attractive biotechnological tools to complement conventional breeding and transgenic methodology. The benefits of virus-based transient RNA and DNA replicons versus transgenic gene expression include rapid and convenient engineering coupled with flexibility for expeditious application in various plant species. These characteristics are especially advantageous when very high levels of gene expression are desired within a short time, although instability of the foreign gene in the viral genome can present some problems. The strategies that have been tested for foreign gene expression in various virus-based vectors include gene replacement, gene insertion, epitope presentation, use of virus controlled gene expression cassettes, and complementation. Recent reports of the utilization of virus vectors for foreign gene expression in fundamental research and biotechnology applications are discussed.

[Full Text](#) [PDF](#)



© 2004 Annual Reviews. All Rights Reserved.

Technology Partner - Alypon Systems, Inc.

